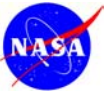


# SATS Technology Integration and Flight Experiments

Mitchel E. Thomas

Manager, SATS Technology Integration and Flight Experiments

NASA Langley Research Center



# *Breakout Groups*



## **Group & topics**

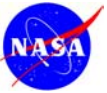
## **Facilitator**

- *Airborne Enabling Technologies:*
  - *Flightpath Guidance*
  - *Flight Deck Systems*
  - *Communication/Navigation/Surveillance Systems*
- *Transportation System Analysis and Assessment*
  - *Economics*
  - *Market demand behavior*
  - *Technology performance metrics*
- *Technology Integration and Flight Evaluation*
  - *Flight research aircraft and experiments*
  - *Simulation experiments and modeling*
  - *Airspace systems*
  - *Airspace procedures*

*Ron Swanda, GAMA*

*Ron Mauri, Volpe*

*Dres Zellweger, FAA*



# ***SATS Tech Integration & Flight Experiments***



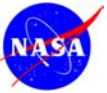
## **Purposes**

### **Flight Experiments:**

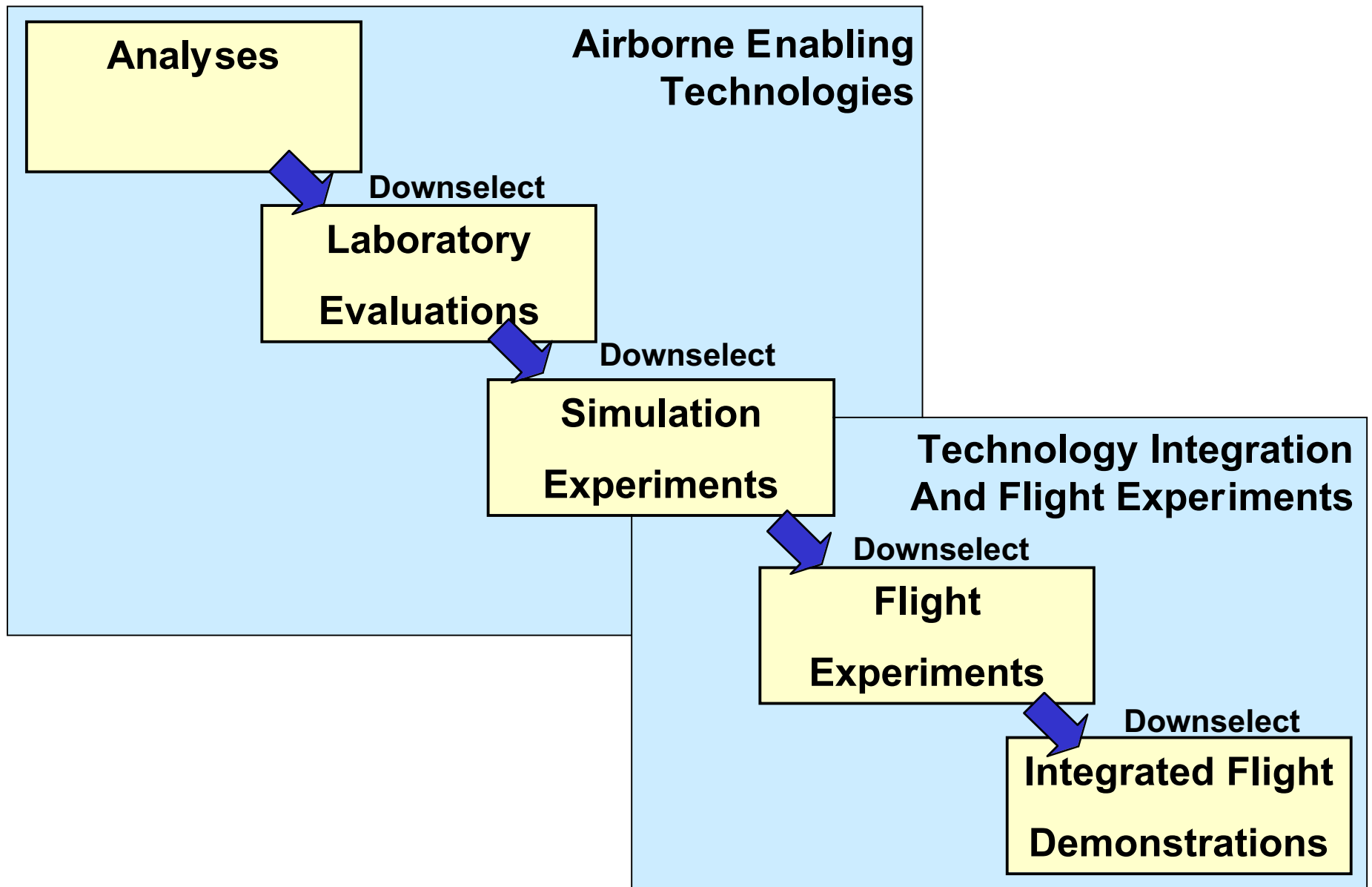
- **Flight validation of enabling airborne technologies**
  - **Revolutionary Integrated Flight Deck**
  - **Automated Flightpath Management**
  - **Communication-Navigation-Surveillance Systems**
- **Integration of technologies for four operating capabilities**
- **Experimental Data Relevant to Certification and Procedural Issues**
- **Data for FAA and industry decision-makers**

### **Demonstration:**

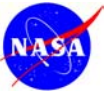
- **Show stakeholders and the public the operational readiness of technologies and public implications of on-demand, distributed air mobility (per 2010 Operational Concept).**
- **Data to support stakeholder decision-making on SATS deployment.**



# *Role of Flight Experiments and Demonstrations*



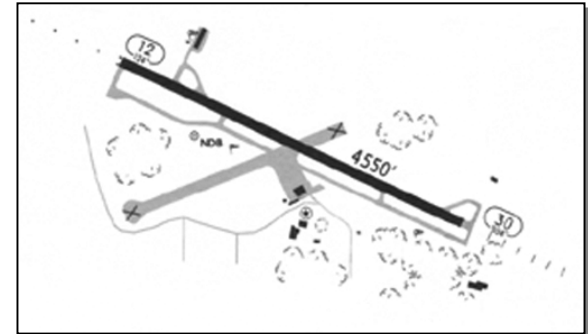


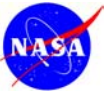


# ***SATS Assets***



- **Airports**
  - NASA Wallops Flight Test Facility/Airspace
  - FAA Technical Center, Flight Test Range
  - SATSLabs State-owned airports
- **Aircraft**
  - NASA Langley Research Aircraft (2)
    - N507NA, Lancair Columbia 300X
    - N501NA, Cirrus Design SR22X
  - SATSLabs Partners' Aircraft
- **General Aviation simulators**
  - NASA Langley
  - FAA Tech Center
  - SATSLabs partners' facilities
- **Desktop aircraft simulations**





# *LaRC Research Aircraft*

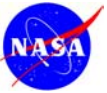


**Lancair Colombia 300X**

## **Equipage:**

- PFD / MFD systems
- Datalink(s)
- GPS
- ADS-B
- AD-AHRS
- Databus
- Research Data Acquisition System

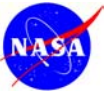




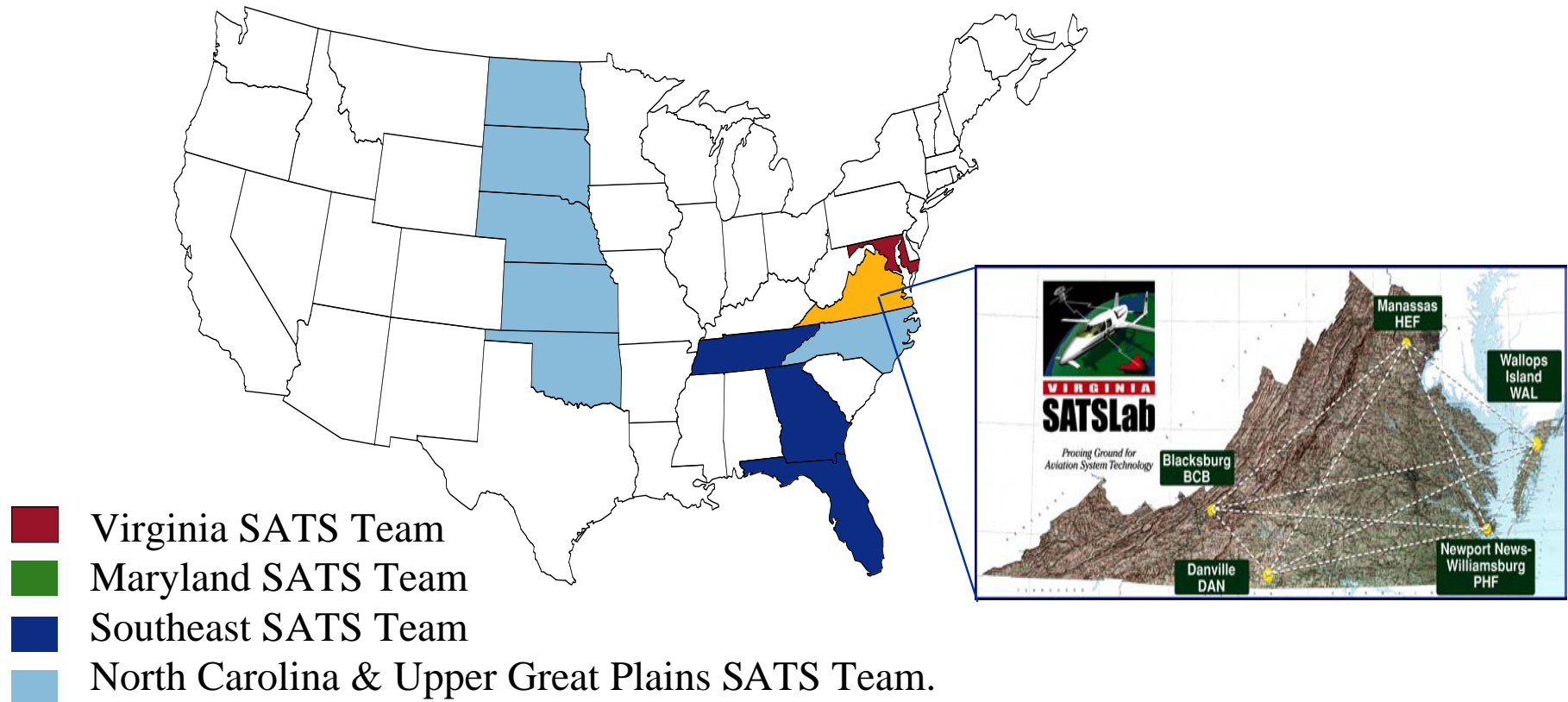
# *Digital Information Facility*





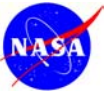


# SATS Partners



Working with our industry partners, we plan a series of flight experiments and demonstrations at multiple, distributed locations.





# ***Audience for SATS Demonstration Flights***



- **State transportation authorities, policy-makers, and opinion leaders**
  - AASHTO
  - NASAO
  - NGA
  - Legislative organizations (ALEC, NCSL, etc. )
- **Industry leaders**
- **FAA, DOT**
- **Public**



# ***Breakout Group Charter***



- ***The Technology Integration and Flight Evaluation Breakout Group will focus predominantly on the following questions:***
  - ***Who should comprise the audience for the SATS 2005 Demonstration?***
  - ***What information will those audiences require? For what purposes?***
  - ***What else is required to prove SATS works?***